Material and methods: This is an observational research, done by cross sectional study, by comparing the two; severe pre-eclampsia and normal pregnancy at Obstetrics Department of RSUP H. Adam Malik and RSUD Dr. Pirngadi Medan. Patients that fulfill the research criterias were checked for blood pressure, proteinuria, serum ferritin level, haemoglobin and haematocrite. Data were then noted in research status and analysed statistically using SPSS 15.0 version.

Results: In this research, 60 patients were taken as sample, who were then placed into 2 research groups, 30 patients in group with severe pre-eclampsia and 30 patients in group with normal pregnancy. No significant differences were found on patients in terms of age, parity and gestational age ($p > 0.05$).

Serum ferritin level were at 187.3 ± 42.8 ng/ml in severe pre-eclampsia and 26.28 ± 6.69 ng/ml in normal pregnancy. Statistically significant correlation ($p < 0.05$) was found. Negative correlation ($p < 0.05$) between serum ferritin level with haemoglobin and haematocrite in severe pre-eclampsia, and positive correlation ($p < 0.05$) between serum ferritin level with haemaglobin and haematocrite in normal pregnancy were found. Positive correlation ($p < 0.05$) was also found in correlation between serum ferritin level and blood pressure in severe pre-eclampsia.

Conclusion: Serum ferritin level in severe pre-eclampsia significantly increased in severe pre-eclampsia compared to serum ferritin level in normal pregnancy.

Keywords: serum ferritin level, severe pre-eclampsia, normal pregnancy, blood pressure, haemoglobin, haemotocrite

Matrix metalloproteinase (MMP)-9 in maternal serum preeclamptic patients

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Objective: To evaluate the maternal serum MMP-9 level in normal women and in pregnancies complicated by pre-eclampsia (PE) and severity of pre-eclampsia by diastolic blood pressure with maternal serum MMP-9 level.

Material and methods: Eighteen pregnant preeclampsia women, and 30 randomly selected healthy pregnant women served as controls. The MMP-9 in serum from all cases was investigated by indirect ELISA technique.

Results: The expression of MMP-9 in maternal serum preeclamptic patients increased than in normal pregnant cases. (283.2 ± 242.6 vs 132.7 ± 170.5 ng/ml. $p < 0.0001$). The plasma level of MMP-9 significantly increased with the increment in diastolic blood pressure ($r = 0,75$).

Conclusion: By altering turnover of the decidual ECM, aberrant decidual cell-expressed MMP-9 expression could promote preeclampsia by interfering with adhesion molecule-mediated stepwise EVT invasion.

Keywords: preeclampsia, extravillous trophoblast, basement membrane, extracellular matrix, matrix metalloproteinase

Association of blood pressure pattern in the second and third trimester with the occurrence of preeclampsia

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Objective: To evaluate the association of blood pressure pattern in the second and third trimester with the occurrence of preeclampsia, its complication and birth weight.

Material and method: Case-control study. Samples were obtained from secondary data of Ante Natal Care (ANC) patients in the 2nd and 3rd trimester, at RSIA Fatimah Makassar throughout 1st January 2008 31st December 2008. Case was defined as a patient which outcome birth diagnosed as preeclampsia, while control was normal pregnancy of the same day visit. The variables studied were systolic and diastolic blood pressure, Mean Arterial Pressure (MAP), mother age, parity, complication of preeclampsia, and birth outcome, which analyzed by the t-test and Fishers Exact test.

Result: Forty three cases and 45 controls meet the study criterion. Change of diastolic blood pressure and MAP of 2nd and 3rd trimester have significant differences ($p<0.05$) between preeclampsia and normal groups. Increase of diastolic blood pressure throughout 2nd and 3rd trimester have the risk of preeclampsia ($p = 0.000$; OR = 6.45, CI 95%, 2.274 18.276), increase of MAP > 16.64 mmHg have the risk of preeclampsia ($p=0.000$; OR = 46.2, CI 95% 11.76 181.52). There is no association between increase of MAP throughout 2nd and 3rd trimester with the complication of preeclampsia ($p > 0.05$), but associate with the low birth weight ($p=0,019$).

Conclusion: Increase of MAP throughout 2nd and 3rd trimester have higher risk of preeclampsia and associate with low birth weight.

Keywords: preeclampsia, blood pressure pattern, mean arterial pressure